

IN THE CLAIMS

Please amend the claims as follows:

In Claim 13, line 6, replace "thiazoliny" with --thiazoliny--.

Please add the following new claims:

A
B --38. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ³⁷~~1~~, wherein in the formula

(I), R₁ represents a substituted or unsubstituted heterocyclic thio group ^{and a pharmaceutically acceptable carrier}.

C 39. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ³⁸~~2~~, wherein the heterocyclic group of said substituted or unsubstituted heterocyclic thio group is any one of the following substituted or unsubstituted groups (a) to (h):

(a) a 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms;

(b) a 7-12 membered, unsaturated, heteropolycyclic group containing 1 to 5 nitrogen atoms;

(c) a 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 2 oxygen atoms and 1 to 3 nitrogen atoms;

(d) a 7-12 membered, unsaturated, heteropolycyclic group containing 1 to 2 oxygen atoms and 1 to 3 nitrogen atoms;

(e) a 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 2 sulfur atoms and 1 to 3 nitrogen atoms;

(f) a 7-12 membered, unsaturated, heteropolycyclic group containing 1 to 2 sulfur

atoms and 1 to 3 nitrogen atoms;

(g) a 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 2 oxygen atoms; and

(h) a 3-8 membered, unsaturated or saturated, heteromonocyclic group containing one sulfur atom; *and a pharmaceutically acceptable carrier*

40. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ³⁹ ~~3~~, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms and represented by (a) is a pyrrolyl, pyrrolidinyl, imidazolyl, pyrazolyl, pyridyl, pyrimidyl, pyrazinyl, pyridazinyl, triazolyl, tetrazolyl, dihydrotriazinyl, azetidiny, pyrrolidinyl, imidazolidinyl, piperidinyl, pyrazolidinyl or piperazinyl group; *and a pharmaceutically acceptable carrier*

41. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ³⁹ ~~3~~, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms and represented by (a) is a pyrrolidinyl group; *and pharmaceutically acceptable carrier*

42. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ³⁹ ~~3~~, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms and represented by (a) is an (S)-pyrrolidin-3-yl group; *and pharmaceutically acceptable carrier*

43. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ³⁹ ~~3~~, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms and represented by (a) is a piperidinyl group; *and pharmaceutically acceptable carrier*

C
A
B 44. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ³⁹~~3~~, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms and represented by (a) is a piperidin-4-yl group; *and a pharmaceutically acceptable carrier*

C
B 45. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ³⁹~~3~~, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 4 nitrogen atoms and represented by (a) is a piperidin-3-yl group; *and a pharmaceutically acceptable carrier*

C
B 46. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ³⁹~~3~~, wherein said 7-12 membered, unsaturated, heteropolycyclic group containing 1 to 5 nitrogen atoms and represented by (b) is an indolyl, isoindolyl, indoliziny, benzimidazolyl, quinolyl, isoquinolyl, indazolyl, benzotriazolyl, tetrazolopyridyl, tetrazolopiridaziny or dihydrotriazolopyridaziny group; *and a pharmaceutically acceptable carrier*

C
B 47. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ³⁹~~3~~, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 2 oxygen atoms and 1 to 3 nitrogen atoms and represented by (c) is an oxazolyl, isooxazolyl, oxadiazolyl or morpholinyl group; *and a pharmaceutically acceptable carrier*

C
B 48. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ³⁹~~3~~, wherein said 7-12 membered, unsaturated, heteropolycyclic group containing 1 to 2 oxygen atoms and 1 to 3 nitrogen atoms and represented by (d) is a benzoxazolyl or benzoxadiazolyl group; *and a pharmaceutically acceptable carrier*

49. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ~~39~~³⁹, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 2 sulfur atoms and 1 to 3 nitrogen atoms and represented by (e) is a 1,3-thiazolyl, 1,2-thiazolyl, thiazolinyl, thiadiazolyl or thiazolidinyl group; *and a pharmaceutically acceptable carrier*

50. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ~~39~~³⁹, wherein said 7-12 membered, unsaturated, heteropolycyclic group containing 1 to 2 sulfur atoms and 1 to 3 nitrogen atoms and represented by (f) is a benzothiazolyl or benzothiadiazolyl group; *and a pharmaceutically acceptable carrier*

51. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ~~39~~³⁹, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing 1 to 2 oxygen atoms and represented by (g) is a furanyl, pyranyl, tetrahydrofuranyl or tetrahydropyranyl group; *and a pharmaceutically acceptable carrier*

52. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ~~39~~³⁹, wherein said 3-8 membered, unsaturated or saturated, heteromonocyclic group containing one sulfur atom and represented by (h) is a thienyl or tetrahydrothienyl group; *and a pharmaceutically acceptable carrier*

53. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ~~37~~³⁷, wherein in the formula (I), R₁ represents a substituted or unsubstituted alkylthio group; *and a pharmaceutically acceptable carrier*

54. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ~~53~~⁵³, wherein the alkyl group of said substituted or unsubstituted alkylthio group is a linear or branched lower alkyl group, or

a monocyclic or polycyclic alkyl group which may be in the form of a fused ring with an aromatic hydrocarbon. ^B _Λ; and a pharmaceutically acceptable carrier

^{Q' cont} 55. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ⁵³ ~~17~~, wherein the alkyl group of said substituted or unsubstituted alkylthio group is a methyl, ethyl, n-propyl, isopropyl, n-butyl, tert-butyl or hexyl group. _Λ; and a pharmaceutically acceptable carrier

56. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ⁵³ ~~17~~, wherein the alkyl group of said substituted or unsubstituted alkylthio group is a monocyclic or polycyclic alkyl group selected from a cyclopentyl, cyclohexyl, menthyl, fenchyl, bornyl or indanyl group. _Λ; and a pharmaceutically acceptable carrier

^B 57. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ³⁷ ~~17~~, wherein in the formula (I), _Λ; and a pharmaceutically acceptable carrier ^C R₁ represents a substituted or unsubstituted alkenylthio group.

58. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ⁵⁷ ~~21~~, wherein the alkenyl group of said substituted or unsubstituted alkenylthio group is a linear or branched, lower alkenyl group. _Λ; and a pharmaceutically acceptable carrier ^B

59. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ⁵⁷ ~~21~~, wherein the alkenyl group of said substituted or unsubstituted alkenylthio group is a vinyl, allyl, 2-chloroallyl, 1-propenyl, 2-butenyl or 2-methyl-2-propenyl group. _Λ; and a pharmaceutically acceptable carrier ^B

60. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ³⁷ ~~17~~, wherein in the formula (I), ^C

B R_1 represents a substituted or unsubstituted aralkylthio group. *; and a pharmaceutically acceptable carrier*

A, C 61. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ~~24~~⁶⁰, wherein the aralkyl group of said substituted or unsubstituted aralkylthio group is an aralkyl group containing 7 to 24 carbon atoms. *; and a pharmaceutically acceptable carrier*

B 62. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ~~24~~⁶⁰, wherein the aralkyl group of said substituted or unsubstituted aralkylthio group is a benzyl, phenethyl, 3-phenyl-propyl,

B 2-naphthylmethyl, 2-(1-naphthyl)ethyl, trityl or benzhydryl group. *; and a pharmaceutically acceptable carrier*

B 63. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ~~24~~³⁷, wherein in the formula (I),

B R_1 represents a substituted or unsubstituted arylthio group. *; and a pharmaceutically acceptable carrier*

B 64. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ~~27~~⁶³, wherein the aryl group of said substituted or unsubstituted arylthio group is an aryl group containing 6 to 10 carbon atoms. *; and a pharmaceutically acceptable carrier*

B 65. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ~~27~~⁶³, wherein the aryl group of said substituted or unsubstituted arylthio group is a phenyl, tolyl, xylyl, mesityl, cumenyl or naphthyl group. *; and a pharmaceutically acceptable carrier*

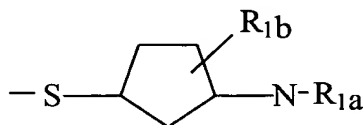
B 66. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ~~27~~³⁷, wherein in the formula (I),

B R_1 represents a substituted or unsubstituted aryl group. *; and a pharmaceutically acceptable carrier*

67. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ³⁷ 1, wherein in the formula (I), *and a pharmaceutically acceptable carrier*
R₁ represents a substituted or unsubstituted heterocyclic group.

68. An antibacterial agent comprising, as an active ingredient, a penem derivative or a pharmacologically acceptable salt thereof according to claim ³⁷ 1, wherein R₁ represents the following group (i) or (ii):

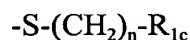
(i) a group represented by the following formula:



wherein R_{1a} and R_{1b} may be the same or different and represent a hydrogen atom, an alkyl group, an alkenyl group, an aralkyl group containing 7 to 24 carbon atoms, an aryl group containing 6 to 10 carbon atoms, an imino lower alkyl group, an imino lower alkyl amino group, an imino(amino) lower alkyl group, a carbamonyl group, a carbamoyl lower alkyl group, an acyl group, an acyl lower alkyl group, carboxyl group, a heterocyclic group or a heterocyclic lower alkyl group; one or more hydrogen atoms of said alkyl, alkenyl, aralkyl, aryl, imino lower alkyl, imino lower alkyl amino, imino(amino) lower alkyl, carbamoyl, carbamoyl lower alkyl, heterocyclic or heterocyclic lower alkyl group may each be substituted by a halogen atom, a carboxyl group, a thiocarboxyl group, a formyl group, a nitro group, a cyano group, a hydroxyl group, an amino group, an imino group, a lower alkylene acetal group, an alkyl group, an alkoxyl group, an alkenyl group, an aralkyl group containing 7 to 24 carbon atoms, an aryl group containing 6 to 10 carbon atoms, an aryloxy group containing 6 to 10 carbon atoms, an imino lower alkyl group, an imino lower alkyl

a¹
amino group, an imino (amino) lower alkyl group, a carbamoyl group, a carbamoyloxy group, a carbamoyl lower alkyl group, a heterocyclic group, a heterocyclic lower alkyl group, an acyl group or an acylalkyl group; said acyl groups and the acyl group of said acyl lower alkyl group represent an alkyl carbonyl, alkenylcarbonyl, aralkyl carbonyl, arylcarbonyl, heterocyclic carbonyl or heterocyclic lower alkyl carbonyl group containing said substituted or unsubstituted alkyl, alkenyl, aralkyl, aryl, heterocyclic or heterocyclic lower alkyl group; said carboxyl group may be esterified by said substituted or unsubstituted alkyl, alkenyl, aralkyl, aryl, heterocyclic or heterocyclic lower alkyl group; said heterocyclic groups and the heterocyclic group of said heterocyclic lower alkyl group may each contain one or more carbonyl group in the rings thereof and the tertiary nitrogen atom thereof may form an intramolecular quaternary salt by the introduction of said substituent; and

(ii) a group represented by the following formula:



wherein n stands for 1 to 3; R_{1c} represents a hydrogen atom, an aryl group containing 6 to 10 carbon atoms, an amino group, an imino lower alkyl amino group, an aminosulfonyl group, carbamoyl group, acyl group, a carboxyl group or a heterocyclic group; one or more hydrogen atoms of said aryl, amino, imino lower alkyl amino aminosulfonyl, carbamoyl or heterocyclic group may each be substituted by a halogen atom, a carboxyl group, a thiocarboxyl group, a formyl group, a nitro group, a cyano group, a hydroxyl group, an amino group, an imino group, an alkyl group, an alkoxy group, an alkenyl group, an aralkyl group containing 7 to 24 carbon atoms, an aryl group containing 6 to 10 carbon atoms, an aryloxy group containing 6 to 10 carbon atoms, an imino lower alkyl group, an imino lower alkyl amino group, an imino (amino) lower alkyl group, a carbamoyl group, a carbamoyloxy group,

a carbamoyl lower alkyl group, a heterocyclic group, a hetero-cyclic lower alkyl group, an acyl group or an acylalkyl group; said acyl groups and the acyl group of said acylalkyl groups recited as a substituent represent an alkylcarbonyl, alkenylcarbonyl, aralkylcarbonyl, arylcarbonyl, heterocyclic carbonyl or heterocyclic lower alkyl carbonyl group containing one or more alkyl, alkenyl, aralkyl, aryl, heterocyclic or heterocyclic lower alkyl groups; one or more hydrogen atoms of these acyl groups may each be substituted by a halogen atom, a carboxyl group, a thiocarboxyl group, a formyl group, a nitro group, a cyano group, a hydroxyl group, an amino group, an imino group, a lower alkylene acetal group, an alkyl group, an alkoxy group, an alkenyl group, an aralkyl group containing 7 to 24 carbon atoms, an aryl group containing 6 to 10 carbon atoms, an aryloxy group containing 6 to 10 carbon atoms, an imino lower alkyl group, an imino lower alkyl amino group, an imino (amino) lower alkyl group, carbamoyl group, a carbamoyloxy group, a carbamoyl lower alkyl group, a heterocyclic group, a heterocyclic lower alkyl group, an acyl group or an acylalkyl group; said carboxyl group may be esterified by a substituted or unsubstituted alkyl, alkenyl, aralkyl, aryl, heterocyclic or heterocyclic lower alkyl group; said heterocyclic group and the heterocyclic group of said heterocyclic lower alkyl groups, the latter heterocyclic group being recited as a substituent, may each contain one or more carbonyl groups in the ring thereof and the tertiary nitrogen atom thereof may form an intramolecular quaternary salt by the introduction of said substituent.--

and a pharmaceutically acceptable carrier